

Notes on Abyssal Gastropods of the Eastern Pacific, with Descriptions of Three New Species

BY

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(2 Plates)

INTRODUCTION

THE DEEP-SEA GASTROPOD FAUNA is presently very poorly known. CLARKE (1962a, 1962b) listed 491 species and subspecies of prosobranch gastropods recorded from depths greater than 1000 fathoms in the world oceans. More recently, LUS (1969) cited only 93 abyssal prosobranch species from the entire Pacific. In contrast, shelf prosobranchs are much better known with an estimated 1200 species occurring at depths less than 100 fathoms from Point Barrow, Alaska to Panama alone. Considering the paucity of abyssal lowerings and the recent unexpected find of a very high species diversity in the deep-sea environment (HESSLER & SANDERS, 1967; SANDERS & HESSLER, 1969) it is expected that a significantly large number of deep-sea gastropod species are yet to be discovered. This paper is a brief report on several new and little known species of abyssal gastropods collected by Scripps Institution of Oceanography research vessels during the past few years.

Abbreviations for institutions mentioned in the text are as follows: LACM - Los Angeles County Museum of Natural History; SIO - Scripps Institution of Oceanography, University of California, San Diego; USNM - United States National Museum (more properly known as the National Museum of Natural History), Washington, D. C.

SEGUENZIIDAE

Seguenzia Jeffreys, 1896

Seguenzia megaloncha Rokop, spec. nov.

(Figure 1)

Description: Shell small, white, turbiniform, with a nacreous surface. Protoconch minute, smooth, and glob-

ular; teleoconch of $5\frac{1}{2}$ whorls. Spiral sculpture of the spire consists of 2 principal carinae, the more prominent of these situated approximately midway between the sutures and the other located adapical to the medial carina, near the suture. Sutures confluent with a peripheral carina which is visible only on the body whorl. Basal disc with an additional 17 narrow carinae. Numerous fine spiral threads occur between the carinae, increasing in number abapically. Axial sculpture of numerous equal and equally spaced sinuous threads, numbering more than 100 on the body whorl. Abapical to the peripheral carina on the base these threads are markedly opisthocrypt; adapically and adaxially toward the medial carina these threads are opisthocline and prosocrypt; adapical to the medial carina toward the suture they are opisthocrypt and prosocline. Umbilicus very deep and narrow, approximately $\frac{1}{3}$ the diameter of the body whorl. Aperture subquadrate and irregular. Columellar pillar arcuate, slightly reflected outward.

Holotype: USNM 701260, shell height 9.2 mm, last whorl 6.2 mm, aperture 4.4 mm, maximum diameter 8.3 mm.

Paratype: LACM 1550 (poor condition), shell height 9.0 mm, last whorl 6.7 mm, aperture 4.8 mm.

Type Locality: SIO67-115. SW of Farallon Islands and W of Pioneer Seamount, off northern California; $37^{\circ}22'N$, $123^{\circ}54'W$ to $37^{\circ}16'N$, $123^{\circ}53'W$; 1964 - 2077 fathoms; June 14-15, 1967; R/V *T. Washington*.

Remarks: This species most closely resembles *Seguenzia giovia* Dall, 1919 (DALL, 1919: 343; OLDROYD, 1927: 245; plt. 33, figs. 1 - 3). *Seguenzia giovia* differs markedly in having only one carina on the spire, fewer basal carinae, and obscure sutures.

MURICIDAE

Trophonopsis Bucquoy, Dautzenberg & Dollfuss, 1882

Trophonopsis hubbsi Rokop, spec. nov.

(Figures 2, 3)

Description: Shell moderately small, white, rather light and delicate, about 4 whorls (protoconch defective). Axial sculpture of closely spaced, imbricate lamellae, approximately 40 in number on the last whorl. Spire moderately high, upper surface of whorls tabulate. Body whorl with 4 strong spiral ribs, the penultimate and earlier whorls with only the 3 uppermost ribs, the lowermost spiral rib below the suture. None of the ribs extend to the anterior canal which possesses only the finely imbricate lamellae. The junction of the varicose lamellae and spiral ribs is marked by fluting of the varices into open "spine-like" processes. Anterior canal long and slender, slightly recurved distally. Aperture pyriform, as long as the anterior canal. Outer lip with 4 grooves, fimbriate at the margins corresponding to the junction of the spiral ribs and the varicose lamellae. Inner lip smooth with a very slight callus on the columella.

Holotype: USNM 701258, shell height 19.2 mm, last whorl 15.8 mm, aperture and canal 12.9 mm, maximum diameter 8.8 mm.

Paratypes: USNM 701259, shell height 12.7 mm, last whorl 9.6 mm, aperture and canal 7.4 mm, maximum diameter 7.5 mm. LACM 1549, shell height 17.3 mm, last whorl 14.4 mm, aperture and canal 11.0 mm, maximum diameter 8.7 mm.

Type Locality: SIO70-22. On abyssal plain off Patton Escarpment, approximately 225 miles W of Cabo Colnett, Baja California, Mexico; 31°19.7' N, 119°39.2' W to 31°08.2' N, 119°35.5' W; 1968 - 2010 fathoms; December 18, 1969; R/V *Melville*.

Remarks: This species very closely resembles *Trophonopsis crystallinus* Kuroda (KURODA, 1953: 188; figs. 3 - 4)

from 97 fathoms off Miyako, east coast of Honshu, Japan. *Trophonopsis crystallinus*, however, differs in having only 2 spiral ribs on the spire and a greater number of axial lamellae (about 50). Also the interspaces between spiral ribs are noticeably greater in *T. crystallinus*.

This species is dedicated to the renowned ichthyologist Dr. Carl L. Hubbs, Professor Emeritus, Scripps Institution of Oceanography, University of California. For many years his collecting programs have obtained many new and otherwise noteworthy fishes and invertebrates. Consequently his activities have substantially increased our knowledge of Eastern Pacific mollusks.

VOLUTIDAE

Sigaluta Rehder, 1967

Sigaluta cukri Rokop, spec. nov.

(Figures 4, 5)

Description: Shell moderately large, rather light, thin, and extremely fragile; very narrowly ovate in shape with 4 whorls. Spire obtuse with flattened whorls; protoconch bulbous, smooth. Outer lip thin and gently arcuate. Columella without thickenings or callus; columellar plicae 2 in number, very weakly elevated and strongly ascending. Completely devoid of sculpture and color markings. Overall color a very light tan with a slightly lustrous surface.

Holotype: USNM 701261, shell height 65 mm, last whorl 57 mm, aperture 49 mm, maximum diameter 24.5 mm.

Type Locality: SIO66-547. The abyssal plain WSW of Cortes Bank, approximately 225 miles W of Ensenada, Baja California, Mexico; 32°05' N, 120°29' W to 32°03' N, 120°30' W; 2064 - 2072 fathoms; December 11, 1966; R/V *Horizon*.

Remarks: The genus *Sigaluta* was erected to receive 2 specimens of an unusual species of volute collected in 208 fathoms in the South China Sea off Hong Kong which

Plate Explanation

Figure 1: *Seuenzia megaloncha* Rokop, spec. nov. Holotype, USNM 701260. SW of the Farallon Islands and W of Pioneer Seamount, off northern California. 1964 - 2077 fathoms. Height 9.2 mm, diameter 8.3 mm × 6.8
Figures 2 and 3: *Trophonopsis hubbsi* Rokop, spec. nov. Holotype, USNM 701258. Off Patton Escarpment, approximately 225 miles W of Cabo Colnett, Baja California, Mexico. 1968 - 2010 fathoms. Height 19.2 mm, diameter 8.8 mm × 5.4

Figures 4 and 5: *Sigaluta cukri* Rokop, spec. nov. Holotype, USNM 701261. WSW of Cortes Bank, approximately 225 miles W of Ensenada, Baja California, Mexico. 2064 - 2072 fathoms. Height 65 mm, diameter 24.5 mm × 1.3
Figures 6 and 7: *Tractolira sparta* Dall, 1896. The abyssal plain WSW of Cortes Bank, approximately 225 miles W of Ensenada, Baja California, Mexico. 2064 - 2072 fathoms. Height 64 mm, diameter 20 mm × 1.3



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

REHDER (1967) described as *Sigaluta pratasensis*. Subsequently REHDER (1970) reported another, much larger specimen of *S. pratasensis* originally obtained by a fisherman in Kaohsiung, Taiwan. Consequently the genus has hitherto been represented only from the South China Sea in moderate depths. The present new species, an abyssal Eastern Pacific representative, can be readily distinguished from *S. pratasensis* by its very thin, fragile shell, much narrower shape, and weak columellar plicae.

It gives me great pleasure to name this species in the memory of a very close friend and colleague, Thomas Cukr. As a museum scientist, his endeavors in the SIO Invertebrate Collection were outstanding. He died tragically at the age of 28 in a SCUBA accident in July, 1969.

Tractolira Dall, 1896

Tractolira sparta Dall, 1896

(Figures 6, 7)

1896. *Tractolira sparta* DALL, Proc. U. S. Nat. Mus. 18: 13
 1907. *Tractolira sparta* Dall. DALL, Smithsonian. Misc. Coll. 48: 366
 1908. *Tractolira sparta* Dall. DALL, Bull. Mus. Comp. Zool. 43: 299; plt. 2, fig. 7
 1943. *Tractolira sparta* Dall. WENZ, Gastropoda, Teil 1, Lfg. 6: 1350; fig. 3824
 1961. *Tractolira sparta* Dall. WOLFF, Galathea Reprt. 5: 150
 1964. *Tractolira sparta* Dall. PARKER, Vidensk. Medd. fra Dansk naturh. Foren. 126: 86
 1971. *Tractolira sparta* Dall. KEEN, Sea shells of tropical West America: 620; fig. 1356

This is the only Recent species in the genus; one other species is known from the ?Oligocene of South America (WENZ, 1943).

Previous Records: Known only from 5 abyssal stations in tropical northern latitudes of the Eastern Pacific:

- 1) *Albatross* stations 3360, 3374, 3414, and 3415 in 1672 to 2232 fathoms in the region off Acapulco, Mexico to the Gulf of Panama (DALL, 1908).
- 2) *Galathea* station 716 at 1950 fathoms in the same Acapulco-Panama area (WOLFF, 1961).
- 3) One SIO station approximately 100 miles W of the Islas Marias, near the mouth of the Gulf of California in 1635 to 1640 fathoms (PARKER, 1964).

SIO Collection: SIO66-547. The abyssal plain WSW of Cortes Bank, approximately 225 miles W of Ensenada, Baja California, Mexico. 32°05'N, 120°29'W to 32°03'N, 120°30'W; 2064 - 2072 fathoms; December 11, 1966; R/V *Horizon*; 2 specimens.

Distribution: Off Ensenada, Baja California, Mexico to Panama; 1600 - 2200 fathoms.

FUSINIDAE

Fusinus Rafinesque, 1815

Fusinus rufocaudatus (Dall, 1896)

(Figures 8, 9)

1896. *Fusus? rufocaudatus* DALL, Proc. U. S. Nat. Mus. 18: 12
 1908. *Fusinus (Exilia?) rufocaudatus* (Dall). DALL, Bull. Mus. Comp. Zool. 43: 302; plt. 3, fig. 3
 1964. *Fusinus rufocaudatus* (Dall). PARKER, Vidensk. Medd. fra Dansk naturh. Foren. 126: 86; plt. 9, fig. 4; plt. 10, fig. 4
 1971. *Fusinus rufocaudatus* (Dall). KEEN, Sea shells of tropical West America: 619; fig. 1350

Previous Records: Five abyssal stations in tropical northern latitudes of the Eastern Pacific:

- 1) *Albatross* stations 3360, 3374, 3392, and 3415 in 1270 to 1879 fathoms in the Acapulco-Panama region (DALL, 1908).
- 2) One SIO station approximately 100 miles W of the Islas Marias, near the mouth of the Gulf of California in 1635 to 1640 fathoms (PARKER, 1964).

SIO Collection: SIO70-22. On abyssal plain off the Patton Escarpment, approximately 225 miles W of Cabo Colnett, Baja California, Mexico; 31°19.7'N, 119°39.2'W to 31°08.2'N, 119°35.5'W; 1968 - 2010 fathoms; December 18, 1969; R/V *Melville*; 1 specimen.

Distribution: Off Cabo Colnett, Baja California, Mexico to Panama; 1300 - 2000 fathoms.

BUCCINIDAE

Morrisonella Bartsch, 1945

Morrisonella pacifica (Dall, 1908)

(Figures 10, 11)

1908. *Leucosyrinx? pacifica* DALL, Bull. Mus. Comp. Zool. 43: 270; plt. 12, fig. 3
 1921. *Irenosyrinx pacifica* (Dall). DALL, U. S. Nat. Mus. Bull. 112: 69
 1927. *Irenosyrinx pacifica* (Dall). OLDROYD, The marine shells of the west coast of North America 2 (1): 67
 1945. *Morrisonella pacifica* (Dall). BARTSCH, Nautilus 59: 23; plt. 3, figs. 11 - 14